WHAT IS CLAIMED IS:

1. A composition of matter comprising:

a) a fluorescent polymer; and

b) a chemical moiety QTL comprising a recognition element, which binds to a target biological agent, and a property-altering element which alters fluorescence emitted by said fluorescent polymer when complexed together to a distinguishable degree, bound together by a tethering element, said chemical moiety being adapted for complexation with said fluorescent polymer, wherein, in the presence of binding of said recognition element to said target biological agent, the fluorescence emitted by said polymer is altered from that emitted when said binding between said recognition element and said target biological agent does not occur.

2. The chemical composition of Claim 1, wherein said recognition element is selected from the group consisting of chemical ligands, caffeine, theophylline, xanthine, hormones, antibodies, antibody fragments, oligonucleotides, antigens, polypeptides, glycolipids, proteins, protein fragments, enzymes, peptide nucleic acids and polysaccharides.

3. The chemical composition of Claim 1, wherein said property-altering element is selected from the group consisting of methyl viologen, quinones, metal complexes, fluorescent dyes and electron-accepting moieties electron donating moieties and energy transferring moieties.

4. The chemical composition of Claim 1, wherein said tethering element is selected from the group consisting of a single bond, a single divalent atom, a

divalent chemical moiety up to 100 carbon atoms in length and a multivalent chemical moiety.

5. The chemical composition of Claim 1, further comprising an enhancement agent making fluorescence of said polymer more easily detectable selected from the group consisting of energy transferring and energy donating moieties.

6. The chemical composition of Claim 1, wherein said fluorescent polymer comprises repeat units each containing a fluorescent dye pendant on a backbone moiety.

7. The chemical composition of Claim 1, wherein said fluorescent polymer comprises a fluorescent dye in a J-aggregate.

8. The chemical composition of Claim 6, wherein said fluorescent dye is selected from the group consisting of symmetrical cyanine dye chromophores, unsymmetrical cyanine chromophores, merocyanine dyes, positively charged dye chromophores, negatively charged dye chromophores and neutral dye chromophores.

9. The chemical composition of Claim 1, wherein said fluorescent polymer is affixed to a support.

10. The chemical composition of Claim 1, wherein said fluorescent polymer is bound to said property altering element by a second tethering element.

11. A kit for the detection of biological agents comprising:

a fluorescent polymer and a chemical moiety comprising a recognition element which binds to a target biological agent, a property-altering element which

alters the fluorescent emitted by said fluorescent polymer when duplexed therewith; and a tether connecting said recognition element and said property altering element.

12. The kit of Claim 11, wherein said fluorescent polymer and said chemical moiety are contained in separate compartments with a separation therebetween, which may be removed by physical or chemical means.

13. A method of detecting a target biological agent in a sample comprising:

a) combining said fluorescent polymer and chemical moiety of Claim 1 in a sample;

b) permitting said recognition element to bind with target biological agent present in said sample; and

c) determining the fluorescence emitted by said polymer after said permitting step;

wherein a difference in fluorescence emitted after said permitting step compared with that emitted in the absence of said sample is indicative of the presence of said target biological agent.

14. The method of Claim 13, wherein the amount of target biological agent present in said sample is correlated with the amount of said difference in fluorescence.

15. The method of Claim 13, wherein said polymer is bound to said recognition element by a second tethering element.

16. The method of Claim 13, wherein said sample is selected from the group consisting of liquid, vapor and aerosol.

17. The composition of matter of Claim 1, wherein the presence of said biological agent results in a complex between said chemical moiety and said biological agent, and wherein, when an electric field is applied, said complex is separated from said polymer and the fluorescence emitted by said polymer is altered from that emitted when said separation does not occur.

18. The composition of matter of Claim 17, wherein said biological agent contains a positive or negative charge and said polymer has a charge opposite of said biological agent.

19. A method of detecting a target biological agent in a sample comprising:

a) combining said sample with the composition of matter of Claim 17;

b) permitting said chemical moiety to complex with target biological agent in said sample;

c) applying an electric field; and thereafter

d) detecting the fluorescence emitted by said polymer;

wherein a difference in fluorescence emitted after said electric field is applied compared with that emitted in the absence of said electric field is indicative of the presence of said target biological agent.

20. The method of Claim 19, wherein the amount of target biological agent present in said sample is correlated with the amount of said difference.

21. A method for determining the presence of a target chemical ligand in a sample comprising:

a) complexing a bioagent capable of binding said target chemical ligand to a chemical moiety of Claim 1 to form a bioagent complex;

b) adding said bioagent complex to said sample in the presence of a fluorescent polymer;

c) permitting said target chemical ligand to compete with said chemical moiety for the binding of said bioagent; and

d) determining the fluorescence emitted by said polymer after said permitting step;

wherein the difference in fluorescence emitted after said permitting step compared with that emitted before said permitting step is indicative of the presence of said target chemical ligand.

22. The method of Claim 21, wherein the amount of said target chemical ligand in said sample is correlated with the amount of said difference in fluorescence emitted.